

Claims

[c1] What is claimed is:

A method of converting a monoscopic image into a stereoscopic image comprising:

- a. Inputting three-dimensional graphical data;
- b. Extracting a left stereo image and a right stereo image from said three-dimensional graphical data;
- c. Combining said left stereo image and said right stereo image to produce a stereoscopic image.

[c2] The method of claim 1, further comprising the step of analyzing said three dimensional graphical data for the presence of perspective.

[c3] The method of claim 1, wherein extracting a left stereo image and a right stereo image comprises:

- a. Deriving near and far depth limits for said three-dimensional graphical data;
- b. Setting a stereoscopic convergence point between said near and far depth limits;
- c. Introducing a skew with respect to said convergence point into said two-dimensional projection matrices such that one two-dimensional projection matrix corresponds to a left-eye view and one two-dimensional projections

matrix corresponds to a right eye view.

- [c4] The method of claim 3, wherein said skew is normalized to said convergence point.
- [c5] The method of claim 3, wherein said skew for the left stereo image is the sine of the angle between said left stereo image and the offset of a viewer's left eye, and said stereo skew for the right stereo image is the sine of the angle between said right stereo image and the offset of a viewer's right eye.
- [c6] The method of claim 3, wherein said skew is further adjusted according to the comfort of the viewer.
- [c7] The method of claim 1, wherein said steps of extracting a left stereo image and a right stereo image and combining said left stereo image and said right stereo image to produce a stereoscopic image are automated.
- [c8] An apparatus for converting a monoscopic image into a stereoscopic image comprising:
 - a. Inputting means for inputting 3-D graphical data;
 - b. Analyzing means for analyzing said 3-D graphical data for the presence of perspective;
 - c. Extracting means, for extracting a left and right stereo image from said 3-D graphical data; and
 - d. Stereoscopic viewing means, for viewing said left and

right stereo images as a 3-D stereoscopic image.

[c9] The apparatus of claim 1, wherein said inputting means is a computer applications software.

[c10] The method of claim 1, wherein said extracting means comprises:

a. a means for deriving near and far depth limits for said three-dimensional graphical data;

b. a means for setting a stereoscopic convergence point between said near and far depth limits; and

c. a means for introducing a skew with respect to said convergence point into said two-dimensional projection matrices such that one two-dimensional projection matrix corresponds to a left-eye view and one two-dimensional projection matrix corresponds to a right eye view.

[c11] The method of claim 10, wherein said skew for the left stereo image is the sine of the angle between said left stereo image and the offset of a viewers left eye, and said skew for the right stereo image is the sine of the angle between said right stereo image and the offset of a viewers right eye.

[c12] The method of claim 10, wherein said skew is further adjusted according to the comfort of the viewer.

